



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/915,681   | 07/26/2001  | Marien De Schipper   | NL 000441           | 7598             |
| 24737  | 7590        | 04/23/2004           | EXAMINER            |                  |
| PHILIPS INTELLECTUAL PROPERTY & STANDARDS<br>P.O. BOX 3001<br>BRIARCLIFF MANOR, NY 10510 |             |                      | RUDE, TIMOTHY L     |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2871                |                  |
| DATE MAILED: 04/23/2004  |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

158

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/915,681 | <b>Applicant(s)</b><br>DE SCHIPPER, MARIEN |  |
|                              | <b>Examiner</b><br>Timothy L Rude    | <b>Art Unit</b><br>2871                    |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 January 2004.  
 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-14 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claims*

1. Claims 1 and 4 are amended. Claim 14 is added.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

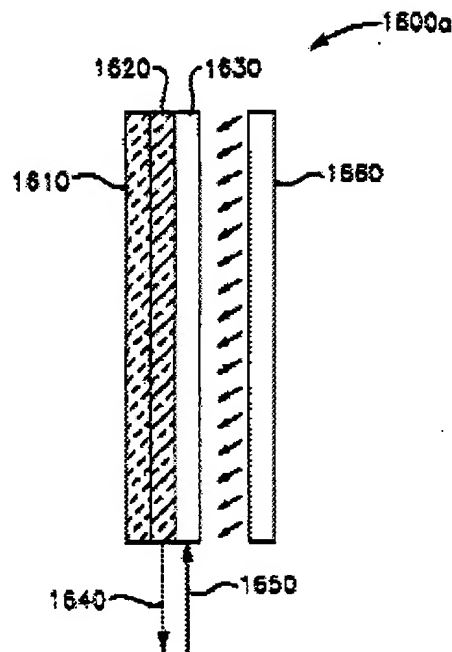
Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rostoker USPAT 5,977,535 in view of Umemoto et al (Umemoto) 6,196,692 B1.

2. As to claim 1, Rostoker discloses in Figure 16A (col. 13, lines 29-48) an image-sensing display device comprising: an image display part including an LCD display panel, 1630 (Applicant's image display panel), and lighting means, 1660, for illuminating the display panel, and

an image-sensing part arranged on top of the display panel, the image sensing part including a two-dimensional array of photosensitive elements, 1620.

Rostoker discloses alternate embodiments but does not explicitly disclose a reflective display panel wherein the lighting means are front-lighting means which are

arranged in front of the array of photosensitive elements on top of the reflective display panel.



**Figure 16A**

Umemoto teaches the use of a reflective display panel with front-lighting means which are arranged in front of the display assembly and on top of the reflective display panel to provide a display that is bright, easy to view, and reduced in power consumption (col. 13, lines 23-32), wherein the light is used when viewing the display (Applicant's only during a display mode of the image-sensing display device) and the components form a single assembly (Figures 6 and 7) (Applicant's wherein the photosensitive elements of the image-sensing part and the reflective display panel and front-lighting means of the image display part are integrated in one module and an image display part including a reflective image display panel and a front-lighting means,

the front-lighting means for illuminating the reflective display panel only during a display mode of the image-sensing display device the front-lighting means including a transparent light guiding plate, the light guiding plate having a lower main flat surface, an upper main flat surface that is substantially parallel to the lower main flat surface, and side surfaces, the frontlighting means further including at least one light source arranged opposite an entrance face corresponding to at least one of the side surfaces, and a side face opposite the entrance face including a reflective face, the light guiding plate further having scattering elements, wherein light rays from the at least one source enter the light guiding plate via the at least one of the side surfaces and are totally internally reflected until reaching a scattering element, the scattering element reflecting light incident thereon in different directions wherein a portion of the reflected light passes through the lower main flat surface and propagates to the reflective display panel and wherein a remaining portion of the reflected light propagates through the light guiding plate, wherein further substantially all the light that enters the light guiding plate via the at least one of the side surfaces is coupled out of the light plate and directed towards the reflective display panel). Please note that making integral or making separable are considered obvious expedients, not generally patentable. Please also note that Applicant's additional limitations to claim 1, though fairly extensive, are largely performance recitations that would inherently be met given the structure of Rostoker in view of Umemoto.

Umemoto is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a reflective display with front-lighting

means to provide a display that is bright, easy to view, and reduced in power consumption.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Rostoker with the front-lighting means of Umemoto to provide a display that is bright, easy to view, and reduced in power consumption.

As to claim 2, Rostoker in view of Umemoto, as combined above, discloses a reflective display panel of claim 1, wherein the reflective display panel further comprises an optic element or lens element, 1610 in Figures 16A-16C and 108/106 in Figure 1 (Applicant's transparent front plate), and further wherein the array of photosensitive elements is arranged under the transparent front plate (Applicant's on an underside of the transparent front plate of the reflective display panel). Please note that Rostoker teaches the claimed alternate locations of lens elements.

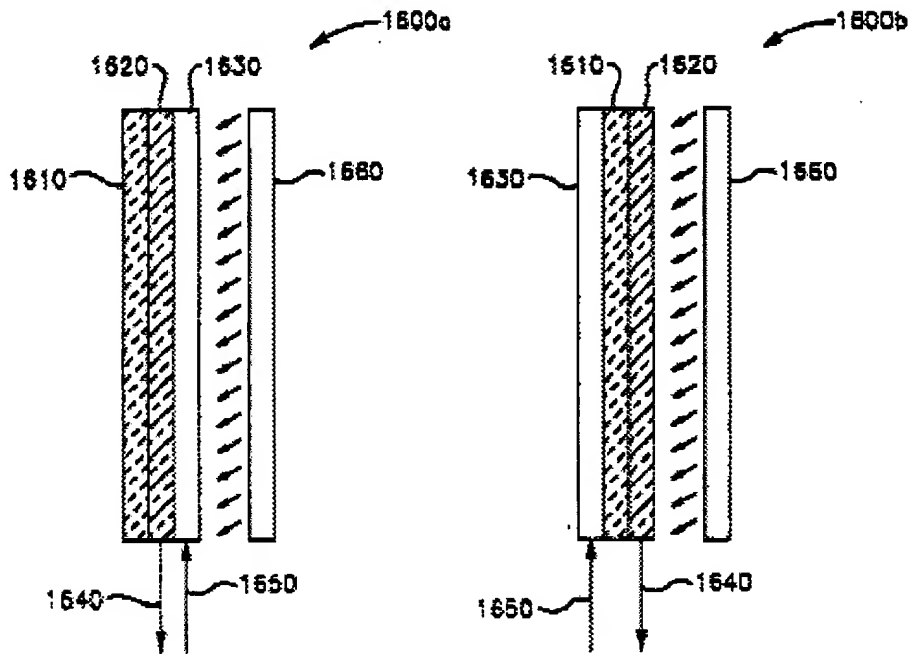


Figure 16A

Figure 16B

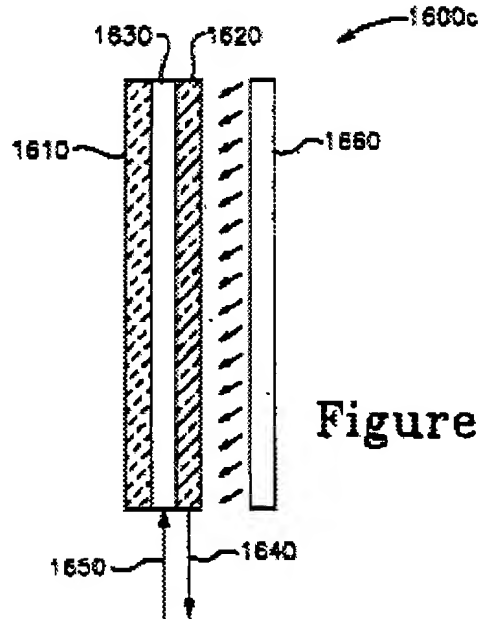


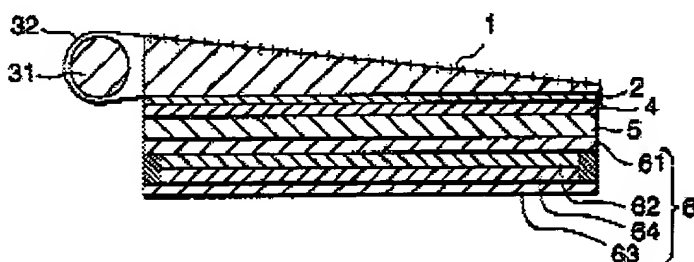
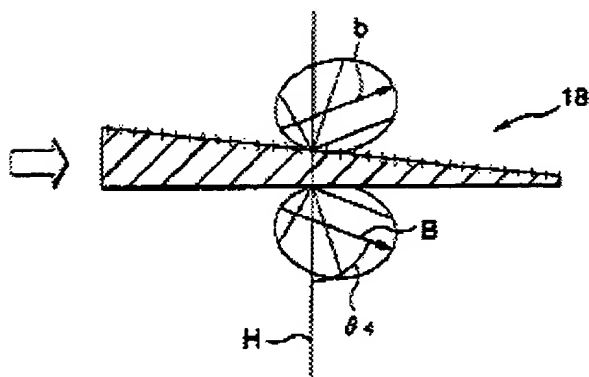
Figure 16C

As to claim 3, Rostoker in view of Umemoto, as combined above, discloses a reflective display panel wherein Rostoker Figures 16A-16D the image-sensing display panel as claimed in claim 1, wherein the reflective display panel further comprises a

Art Unit: 2871

transparent front plate, left surface of 1630, and further wherein the array of photosensitive elements, 1620, is arranged on the top surface of the transparent front plate of the display panel.

As to claim 4, Umemoto, as combined above, discloses in Figures 7 and 9 a front-lighting means further comprise a light conductive plate, 1 (Applicant's light guiding plate), wherein the front light guide redirects and diverges the light (Applicant's includes lens means integrated in the light guiding plate).

**FIG.7****FIG.9**



As to claim 5, Rostoker in view of Umemoto, as combined above, discloses a reflective display panel wherein Rostoker Figure 16C the image-sensing display device wherein the reflective display panel includes lens means, 1610, arranged on the front plate of the display panel, 1630. Rostoker discloses in Figure 1 an image-sensing display panel wherein the display panel further comprises a transparent front plate, 106, with an array of lenses 108, and further wherein the array of photosensitive elements, 102, is arranged on the underside of the transparent front plate, 106.

As to claim 6, Rostoker, as combined above, discloses the image-sensing display device further wherein the array of photosensitive elements includes a CCD sensor (col. 5, lines 13-16).

As to claim 7, the mere selection of a C-MOS image sensor for the array of photosensitive elements is considered a species of the claimed invention, not patentably distinct, unless unexpected results are obtained.

As to claim 8, Rostoker, as combined above, discloses the image-sensing display device further wherein the display panel includes an LCD panel (col. 13, lines 33-36).

As to claim 9, the mere selection of a cholesteric liquid crystal material for the LCD panel is considered a species of the claimed invention, not patentably distinct, unless unexpected results are obtained.

As to claim 10, the mere selection of a twisted nematic liquid crystal material for the LCD panel is considered a species of the claimed invention, not patentably distinct, unless unexpected results are obtained.

As to claims 11 and 12, Rostoker, as combined above, discloses his invention may be used to comprise a video phone (col. 3, lines 47-49) which would comprise: an image communication apparatus comprising image display means, the image display means including an image display panel, and camera means, the camera means including an image sensor, wherein the image display panel and the image sensor comprise an image-sensing display device as claimed in claim 1.

As to claim 13, constructing a videophone apparatus as claimed in claim 12 as a mobile apparatus is considered an obvious expedient of a videophone, not patentably distinct. For convenience, Applicant may view an example of a mobile videophone in Figure 8 and on page 48 of Skow, European Patent Application publication 0 385 128 A2, provided by Applicant in IDS paper #7.

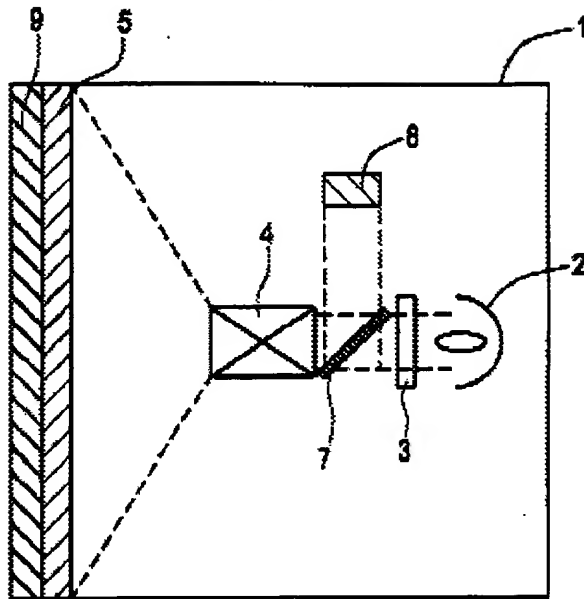
3. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rostoker in view of Umemoto as applied to claims 1-13 above, and further in view of Konuma et al (Konuma) USPAT 6,628,263 B1.

As to claim 14, Rostoker in view of Umemoto, as combined above, teach the device of claim 1.

Rostoker in view of Umemoto do not explicitly disclose a device further comprising a separate lens element mounted to a front of the image-sensing display device, the separate lens element including a Fresnel lens, the Fresnel lens having a lens structure that includes at least one of a) an amplitude structure having a transparent central circular portion and a number of alternating non-transparent and transparent rings, the width and mutual spacing of each decreases from the center to the periphery and b) a phase structure, the phase structure having rings which introduce alternately a first phase shift and a second phase shift in a beam portion passing through the rings.

Konuma teaches in Figure 8B an image-sensing display device further comprising a lens element (col. 5, lines 1-6) mounted to a front of the image-sensing display device, the separate lens element including a Fresnel lens, 9, to improve brightness of images.

**FIG. 8B**



Please note: Applicant's recitations of "the Fresnel lens having a lens structure that includes at least one of a) an amplitude structure having a transparent central circular portion and a number of alternating non-transparent and transparent rings, the width and mutual spacing of each decreases from the center to the periphery and b) a phase structure, the phase structure having rings which introduce alternately a first phase shift and a second phase shift in a beam portion passing through the rings" merely describe the two most common types of Fresnel lens, and as they are disclosed as both being suitable to comprise Applicant's claimed invention, they are considered equivalent species, clearly unpatentable (obvious) over each other (MPEP 808.01(a)).

Konuma is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a lens element mounted to a front of the

Art Unit: 2871

image-sensing display device, the separate lens element including a Fresnel lens to improve brightness of images.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Rostoker in view of Umemoto with the lens element mounted to a front of the image-sensing display device, the separate lens element including a Fresnel lens of Konuma to improve brightness of images.

#### ***Response to Arguments***

4. Applicant's arguments filed on 19 January 2004 have been fully considered but they are not persuasive.

##### **Applicant's ONLY arguments are as follows:**

(1) Even when combined, the references do not teach the claimed subject matter.

(2) Prior art teaches away in that Rostoker is transmissive and back-lighted.

(3) The references are not properly combinable if the intended function is destroyed.

(4) Examiners combination arises solely from hindsight.

(5) Dependent claims 2-13 are dependent upon claim 1 and are therefore allowable.

Examiner's responses to Applicant's ONLY arguments are as follows:

(1) It is respectfully pointed out that Rostoker discloses an image sensing display device comprising an LCD display, and Umemoto teaches the reason, suggestion, and motivation to modify the device of Rostoker to further comprise a reflective display with front light guide, per rejections above. Examiner considers Umemoto to teach robust motivation to combine with Rostoker thereby rendering all claimed patentably distinct structure obvious to those having ordinary skill in the art of liquid crystals at the time the claimed invention was made.

(2) It is respectfully pointed out that Rostoker discloses an image sensing display device comprising an LCD display, and Umemoto teaches the reason, suggestion, and motivation to modify the device of Rostoker to further comprise a reflective display with front light guide, per rejections above, thereby eliminating the transmissive and back-lighted structure of Rostoker. The fact that base-reference Rostoker teaches a transmissive display does not "teach away" from the combination of Umemoto to convert the display to reflective mode per the motivation(s) of Umemoto.

(3) It is respectfully pointed out that Rostoker discloses an image sensing display device comprising an LCD display, and Umemoto teaches the reason, suggestion, and motivation to modify the device of Rostoker to further comprise a reflective display with front light guide, per rejections above, thereby obviously eliminating the transmissive and back-lighted structure of Rostoker which would result in an operable structure per Applicant's enabling disclosure. Naturally the transmissive display of Rostoker would thereby be converted into a reflective display per Umemoto.

(4) It is respectfully pointed out that Umemoto teaches the reason, suggestion, and motivation to modify the device of Rostoker to further comprise a reflective display with front light guiding plate, per rejections above. Additionally, the reasons, suggestions, and motivations to develop reflective and front-lighted displays, as taught in part by Umemoto, are long-standing in the art of liquid crystals. The general modification of a transmissive display device, with or without an image-sensing part, to be reflective and front-lighted is obvious and not patentable per rejections above. However, an inventive solution of some design challenge to achieve superior performance or more cost effective manufacture of a reflective and front-lighted display device, with or without an image-sensing part, might be patentable.

(5) It is respectfully pointed out that Applicant has not argued examiners positions/rejections of dependent claims 2-13. Therefore Applicant has acquiesced Examiner's positions/rejections as to claims 2-13.

### ***Conclusion***

References cited but not applied are relevant to the instant Application. Please note cited references, especially Kaifu et al (Kaifu) USPAT 5,812,109, also teach reflective mode image-sensing display devices.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (571) 272-2301. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



tlr

Timothy L Rude  
Examiner  
Art Unit 2871



DUNG T. NGUYEN  
PRIMARY EXAMINER